2006 ACC Summer Preparedness Hearing

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Planning & Contracts

Tucson Electric Power

March 30, 2006

UniSource Energy

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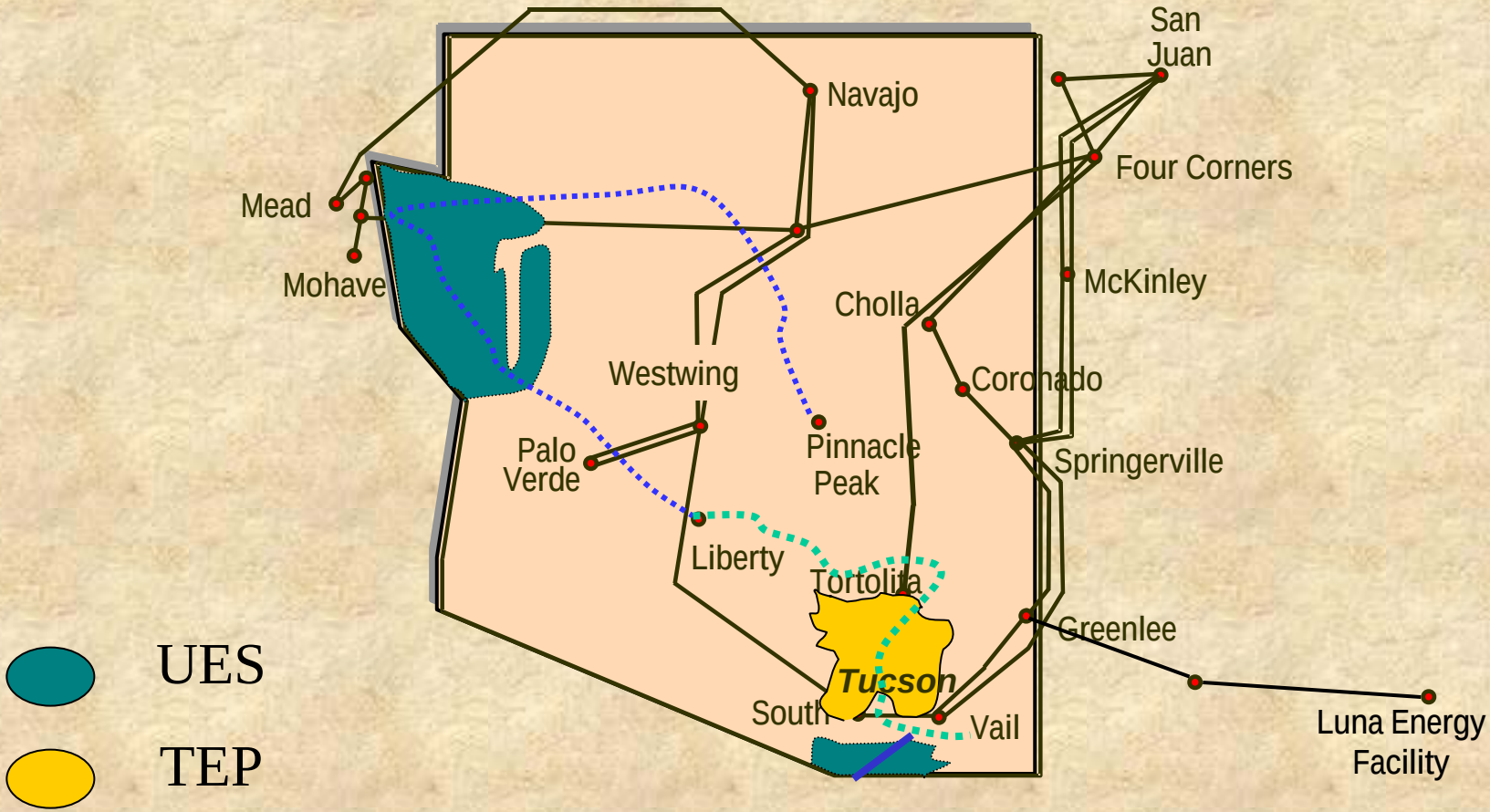
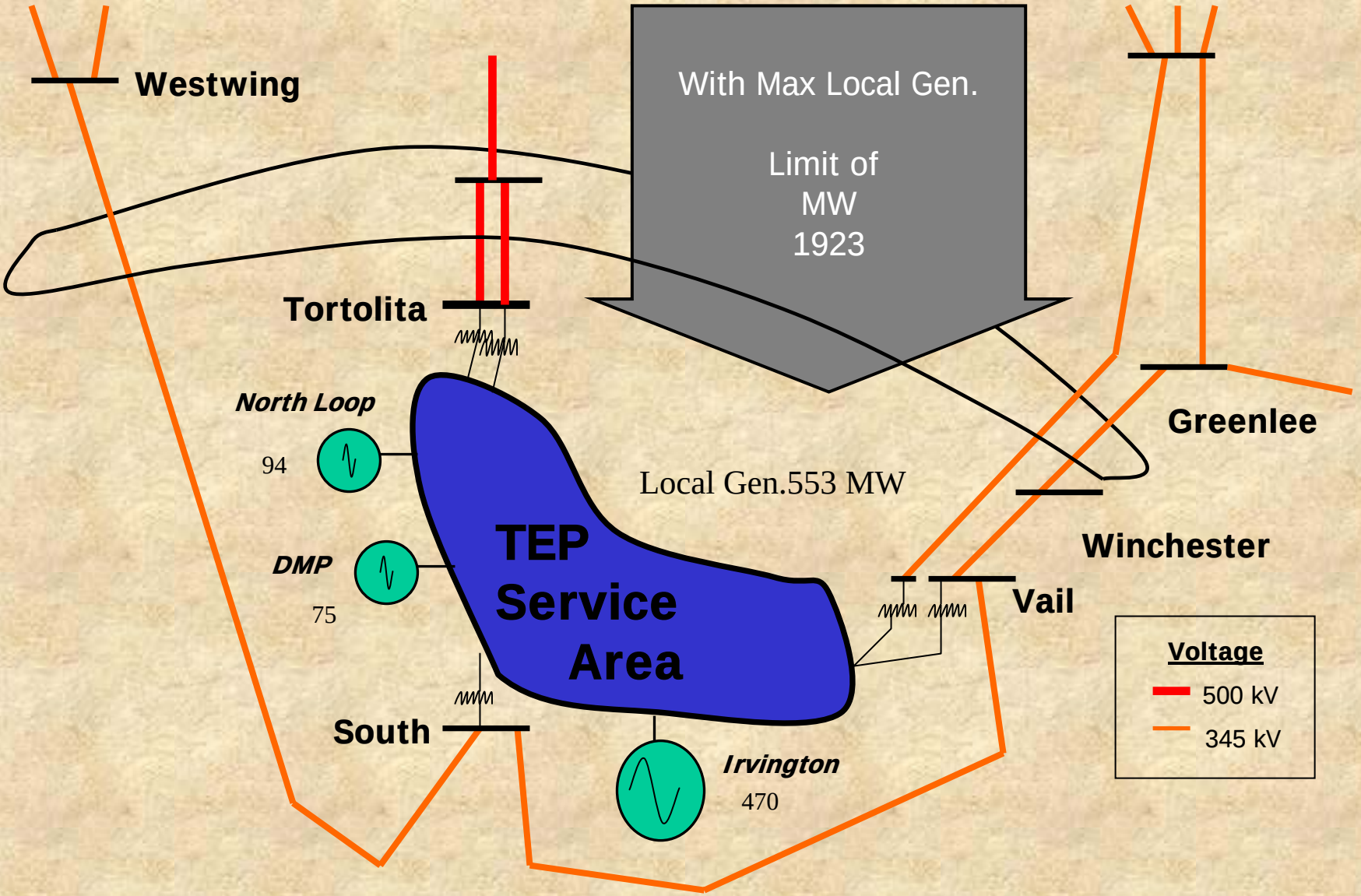
Service Territories



TEP Import Paths



EHV Transmission Preparations

- **Vegetation Clearing**
  - Clearing high fuel areas / tall trees on EHV system (1175 acres)
  - Fort Huachucha substation & lines
  - 115kV line to Nogales
- **Emergency Restoration Procedure**
  - Emergency Restoration structures @ strategic locations
  - Air (6 month cycle) and ground patrols (5 year cycle) for EHV system
  - Data management and GIS systems

Operations Preparations

- Regional black start drills annually
- Local black start test for TEP annually
- Emergency Operations Center (EOC) readiness
  - Weekly check
- Daily conference call between reliability coordinator and control area operators
- Daily reliability call between control area operators

Distribution Preparations

- Review and adjust Power Factor as needed
- Protective Relay maintenance
- Re-closer & breaker Maintenance
- Maintenance of Communication sites including backup generation
- Annual exercise of distribution feeder breakers

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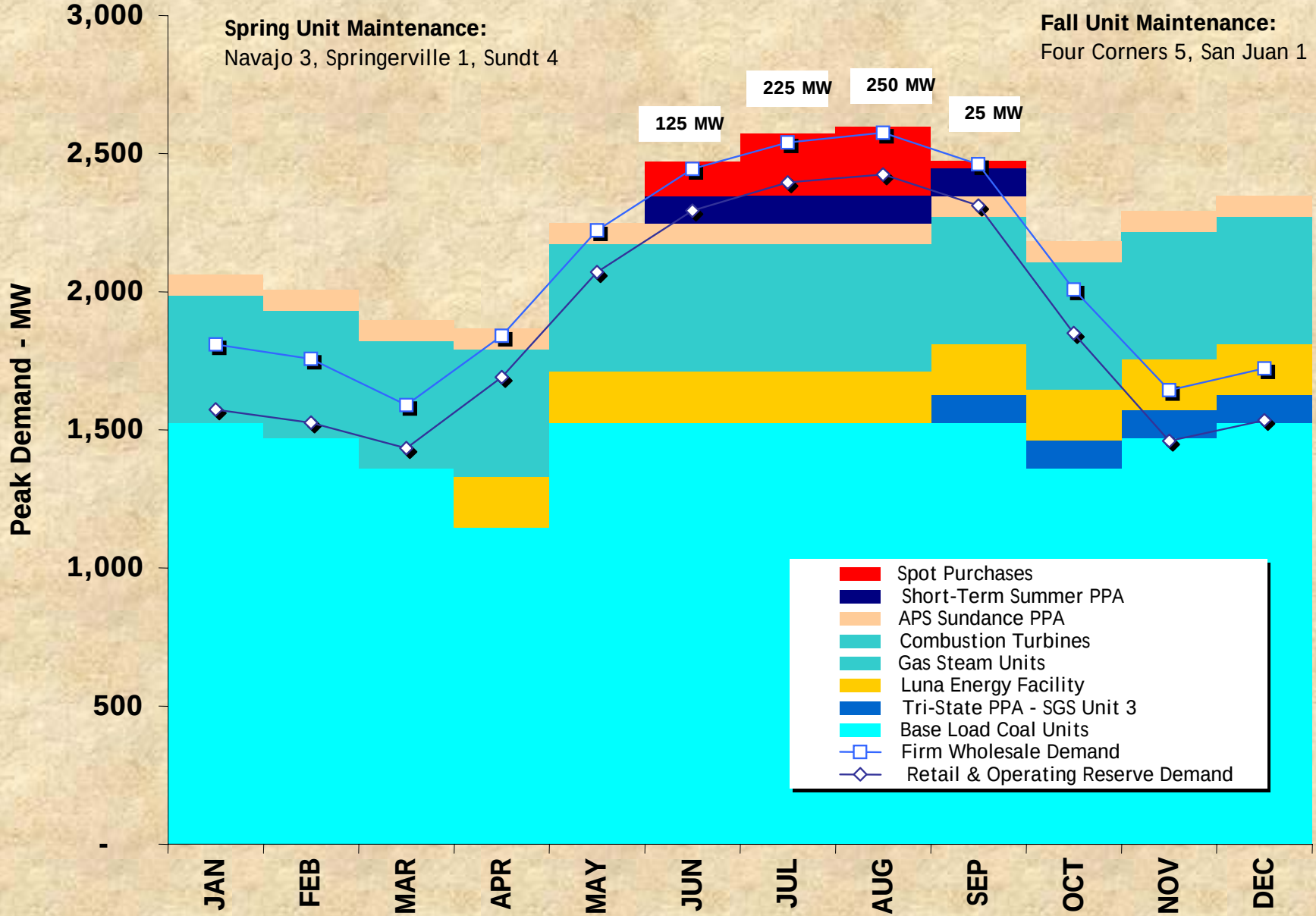
2006 Generation Resources

TEP Generation Resources		
■ Steam Generation - Coal	69%	1,525 MW
■ Steam Generation - Gas	12%	266 MW
■ Combustion Turbine - Gas	10%	217 MW
■ Luna Energy Facility (COD April 2006)	9%	187 MW
Total Generation Resources		**2,196 MW**
Market Based Resources		
■ Firm Short-Term PPAs		100 MW
■ APS - Sundance PPA		75 MW
■ Spot Market Resources		250 MW
Total Market Resources		**425 MW**
Total Generation & Market Based Resources		**2,621 MW**

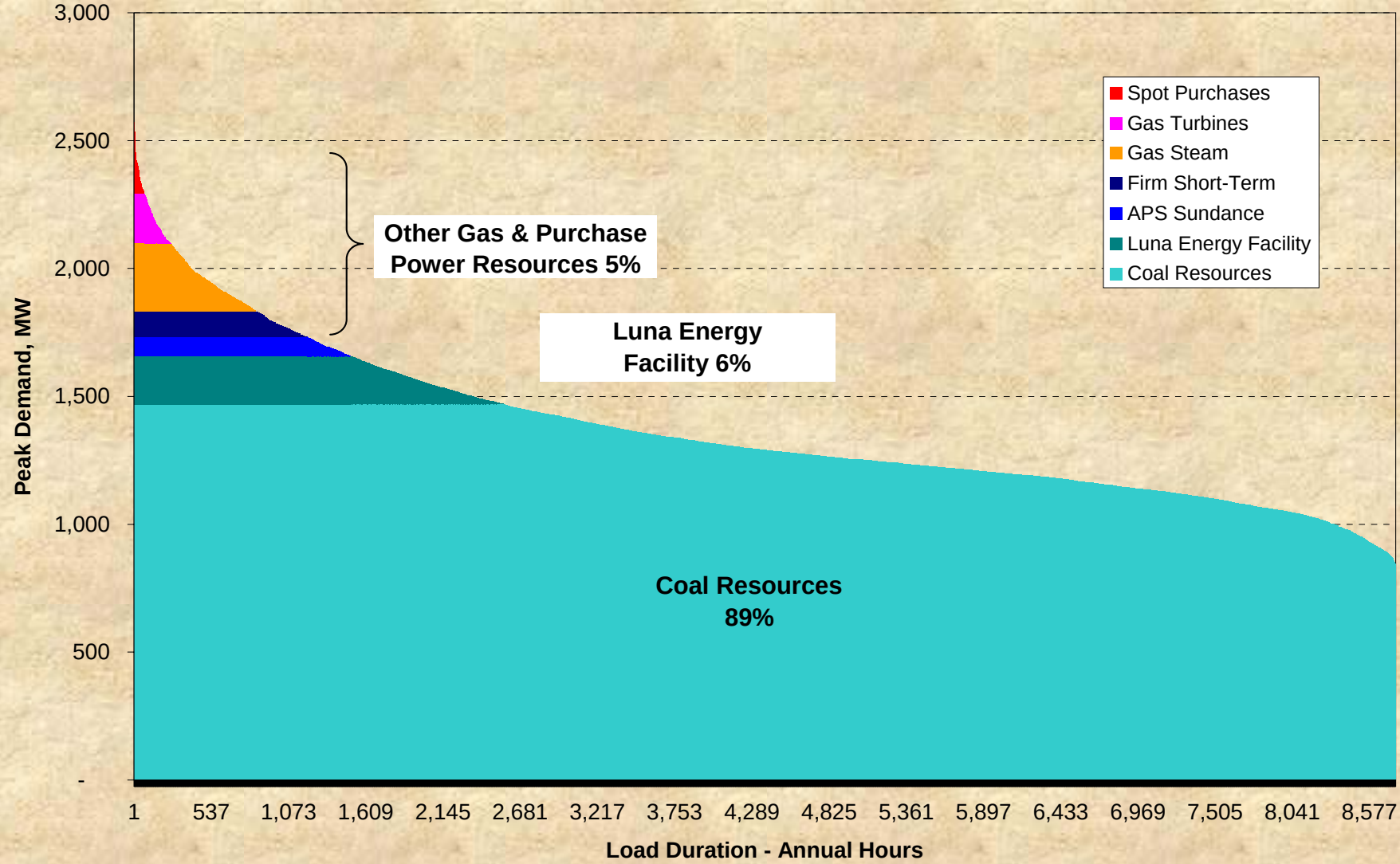
2006 Loads and Resources Peak Demand Forecast

Peak Summer Demand (MW) = 2263



2006 Summer Peak Gas and Purchase Power Exposure

Firm Load Obligations (Retail, SRP, NTUA and Reserves)



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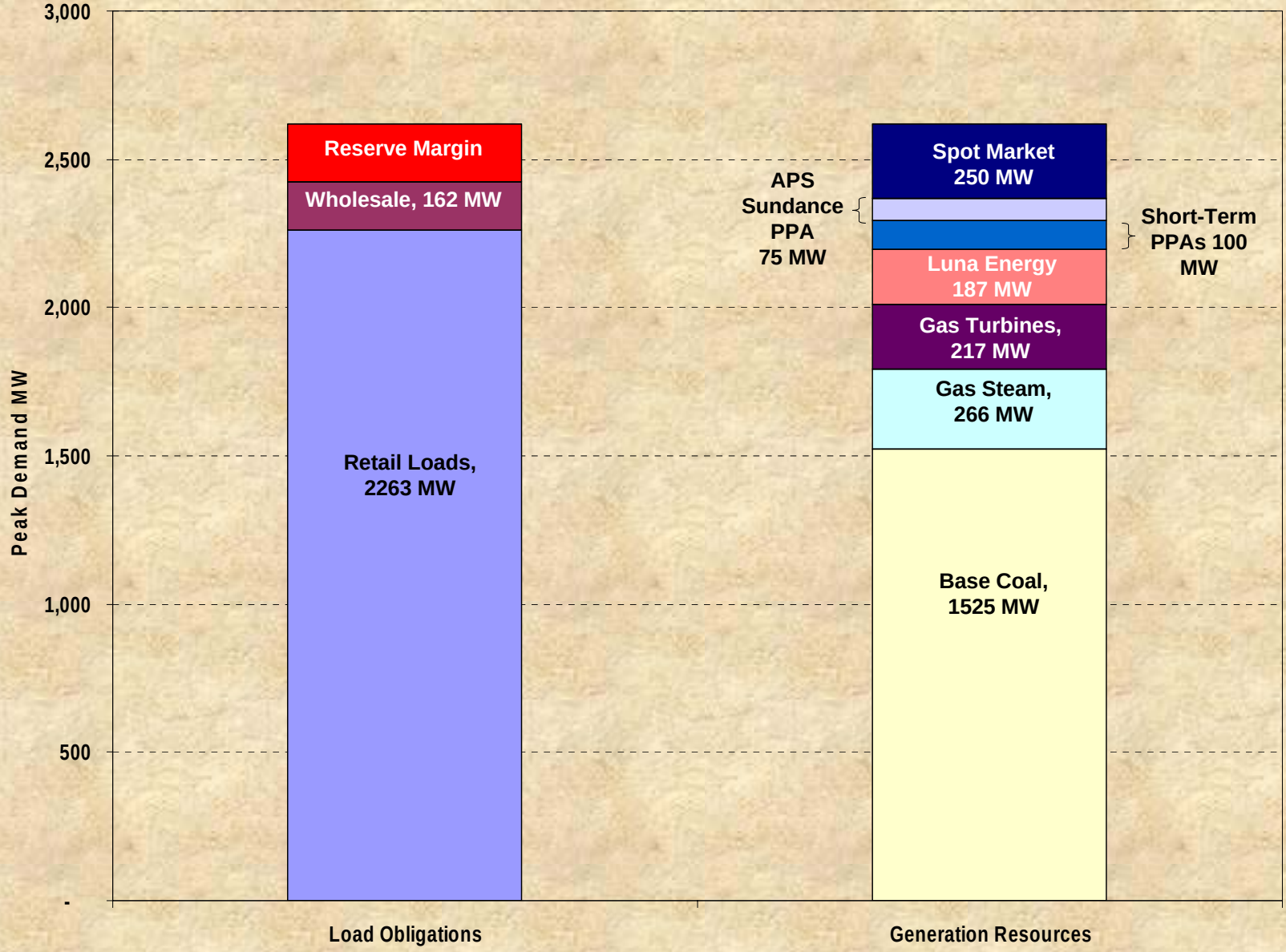
2006 Peak Demand Loads & Resources



Generation Preparations

- **Fall 2005 Maintenance and Overhauls:**
  - **Four Corners 4**
  - **North Loop Turbines**
  - **Sundt 1 & 2 & Turbines**
  - **San Juan 4**

- **Spring 2006:**
  - **Springerville Unit 1**
  - **Navajo Unit 3**
  - **Sundt 4**
  - **San Juan 3**
  - **DMP Turbine**

Generation Contingencies

- **Unit Outages**
  - **SRSG**
    - **Short-Term outage assistance**
  - **Unit Specific Reserve Share Agreements**
    - **San Juan Units 1&2**
    - **Springerville Units 1,2 & 3**
    - **Short to mid-term replacement capacity and energy**
  - **Spot Market Purchases**
    - **Ample AZ capacity**

System Improvements

- Distribution Substation
  - **New 50MVA 138kV/13.8kV distribution substation (Robert Bills) – TEP**
  - **New 44MVA 69kV/13.2kV distribution substation (Desert Hills) – UES Lake Havasu**
  - **New 44MVA 69kV/20.8kV distribution substation (West Golden Valley) – UES Kingman**
- Transformers
  - **New 50MVA 138kV/13.8kV transformer at Snyder Substation - TEP**
  - **In-service spare 345kV/138kV 600MVA three-phase autotransformer installed at South Loop Substation– TEP**
  - **Two new 500kV/345kV 224MVA single-phase autotransformers installed at Westwing Substation - TEP**

System Improvements, cont.

- Completed Doble testing of transformers
- New 185MVA 18kV/138kV GSU transformer installed at Sundt Generating Station, Unit #4 - TEP
- New 44MVA 69kV/13.2kV transformer at London Bridge Substation - UES
- Portable 100 MVA 138kV/46kV/14.4kV/7.2kV transformer available for emergency installation – TEP
- 25MVA 138kV x 46kV/13.8kV x 4kV Mobile Substation available for emergency installation - TEP
- 40MVA 138kV x 115kV x 46kV/13.8kV x 13.2kV Mobile Substation scheduled for delivery in August – TEP and UES Santa Cruz
- 25MVA 69kV/12.5kV x 13.2kV x 20.8kV Mobile Substation scheduled for delivery in June – UES Mohave

Other Upgrades

- RTUs:
  - **Various RTU installations to improve system operations visibility and response - UES**
- Relays:
  - **Protective relay coordination study, relay setting modifications, and relay testing for all Lake Havasu substations – UES**
- Lines
  - New 46kV tie circuit between North East Substation and East Loop Substation – TEP
- Capacitors
  - New 138kV Capacitor Banks at DMP and East Loop Substations

N – 1 – 1

- Westwing transformers being moved from APS yard to TEP yard
- Results of study for N – 1 – 1 show that TEP will continue to meet criteria under this outage condition

UNS Electric

- Full requirements customer of Pinnacle West
- Regular Black start test for Nogales Combustion Turbines
- Installing LM2500 at Valencia in Nogales
- Additional firm transmission obtained to Nogales tap from Western for summer
- Working with Western to determine revised ratings for lines into Mohave

Conclusion

- Sufficient Resources to meet TEP load
- Sufficient Transmission to meet TEP load while meeting NERC / WECC criteria
- Sufficient Transmission to meet UES Mohave load under all conditions
- Sufficient Transmission to meet Santa Cruz load absent contingencies, local generation transmission and distribution ties for contingency